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ABSTRACT

This study examined participation in high school and intercollegiate varsity athletics by following a cohort of 8th-graders through high school and the first 2 years of college. Data from the National Education Longitudinal Study of 1988 were used to track all 1988 8th-graders through 2 years after scheduled high school graduation, all 1988 8th-graders who completed high school, and all 1988 8th-graders who attended 4-year colleges by 1994. For the approximately 3 million students enrolled in 8th-grade in 1988, only 5.2 percent reported participation in intercollegiate athletics at 4-year colleges in 1994, only 2.2 percent if participation at National Collegiate Athletic Association (NCAA) Division I schools is examined separately. Among students attending 4-year colleges, 14.8 percent reported participation in intercollegiate athletics. Males were almost twice as likely as females to report participation in intercollegiate sports at NCAA Division I schools, while high socioeconomic status (SES) students were 10 times as likely as low SES students to report such participation. Black and white students were twice as likely as Hispanic students to report participation in intercollegiate sports at NCAA Division I schools. Also, while 90 percent of participants in intercollegiate athletics met previous NCAA academic standards, only 68 percent would have met the new requirements which went into effect in August 1996. (MDM)

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NATIONAL CENTER FOR EDUCATION STATISTICS

Statistics in Brief December 1996

Who Reports Participation in Varsity Intercollegiate Sports at 4-Year Colleges?

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For many students, the end of 8th-grade signals the beginning of a transition period. During this time, students and parents make many decisions about high schools, courses of study, and extracurricular school activities that will influence the 8th-grader's postsecondary education or occupational plans. It is also realistic to hypothesize that a decision to participate in high school varsity sports at the 8th-grade may lead to participation in intercollegiate sports at the highest level—NCAA Division I. At the Division I level, football teams face off in the Rose or Orange bowls and basketball teams strive to make it to the "Final Four." This report examines youth participation in both high school and intercollegiate varsity athletics by following a cohort of 8th-graders through high school and the first two years of postsecondary education. Participation in intercollegiate varsity sports is reported separately for three groups of students. The first group is all 1988 8th-graders who were followed from 8th-grade through two years after scheduled high school graduation (including dropouts). The second group is those 8th-grade cohort members who completed high school (high school graduates). The third group is those 1988 8th-graders who attended 4-year colleges by 1994 (students attending 4-year colleges).

For the approximately 3 million students enrolled in 8th-grade in 1988, was it realistic to dream about participation in intercollegiate sports at 4-year colleges?[1] For most, the answer seems to be no. The proportion of 1988 8th-graders reporting participation in intercollegiate sports[2] at 4-year colleges is small. By 1994 (two years after scheduled high school graduation), 5.2 percent (52 out of each 1,000 students) actually reported participation in intercollegiate sports at 4-year colleges. This proportion is reduced to 2.2 percent (22 out of each 1,000 students) if participation at NCAA Division I schools[3] is examined separately. For these Division I athletes, these numbers may be further reduced if only student-athletes receiving athletic aid are considered. According to data supplied by the NCAA, 48 percent of all NCAA Division I athletes in 1992/93 received athletic aid.[4] Other highlights of this analysis include:

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Among members of the 8th-grade class of 1988 (group 1):

- Males from the 8th-grade class of 1988 were almost twice as likely as females (2.8 percent as compared to 1.5 percent) to report participation in intercollegiate sports at NCAA Division I schools.

- High socio-economic status (SES) students were 10 times as likely to report participation at Division I schools as were low SES students (5.0 percent compared to 0.5 percent).

- Black students were just as likely as white students to report participation in intercollegiate sports at Division I schools (2.5 percent for blacks and 2.3 percent for whites).

Among the high school graduates from the 8th-grade class of 1988 (group 2):

- Elite high school varsity athletes[5] were much more likely to report participation in intercollegiate sports at NCAA Division I schools (10.5 percent) than were other senior varsity athletes (4.5 percent), other varsity or junior varsity athletes (1.2 percent), or those who did not report being varsity or junior varsity athletes (0.3 percent).

- Three out of each 10 (30.4 percent) elite high school varsity athletes from advantaged backgrounds (high SES) reported participation in intercollegiate sports at 4-year colleges.

- Among elite high school varsity athletes, those from more advantaged backgrounds (high SES) were 3.5 times more likely to report intercollegiate athletic participation at NCAA Division I schools as were those from less advantaged backgrounds (low SES)—14.7 percent as compared to 4.1 percent.

Among the students attending 4-year colleges from the 8th-grade class of 1988 (group 3):

- Overall, 14.8 percent reported participation in intercollegiate athletics.

- 21.5 percent of all NELS:88 8th-graders who attended NCAA Division III colleges reported participation in intercollegiate athletics as compared to 11.5 percent[6] for NELS:88 students attending Division I colleges.

- Over 40 percent of elite high school varsity athletes who went on to 4-year colleges reported participation in intercollegiate athletics. For Division III colleges, this proportion was 58.3 percent.

- For those in the cohort who enrolled in a 4-year college and participated in intercollegiate athletics, 42.3 percent attended NCAA Division I colleges, 17.3 percent attended Division II colleges, 25.0 percent attended Division III colleges, and 15.4 percent attended non-NCAA[7] 4-year colleges.

- While about 90 percent (89.6 percent) of 1988 8th-graders who reported participation in intercollegiate athletics at NCAA Division I schools met the academic requirements of NCAA's Proposition 48, 68.3 percent would have met the requirements specified in Proposition 16[8] which went into effect August, 1996.

Use of NELS:88 data to estimate intercollegiate sports participation rates

In this report, data from the National Education Longitudinal Study of 1988 (NELS:88) are used to investigate participation in intercollegiate athletics by members of the 8th-grade class of 1988. For each student who participated in the study between the years 1988 (base-year) to 1994 (third follow-up), participation status was examined for both high school varsity sports and intercollegiate varsity sports. A student was classified as participating in intercollegiate athletics if he/she attended a 4-year college and reported participation in intercollegiate athletics.

For purposes of this analysis, four types of 4-year colleges have been identified. Using data[9] supplied by the NCAA, codes identifying Divisions I, II, and III were attached to the 4-year college identification codes of colleges

attended by NELS:88 students. Four-year colleges that did not have a NCAA code were classified into the category "other." There are 955 colleges that are classified into the three NCAA divisions (Division I - 305 member schools; Division II - 260 member schools; and Division III - 390 member schools). According to the 1994/95 NCAA manual, a Division I college "strives in its athletics program for regional and national excellence and prominence." Examples of Division I colleges include Duke University, Notre Dame University, and the University of Washington. The NCAA manual states that a Division II school "believes in offering a maximum amount of intercollegiate athletics participation to as many of its students as possible, whether or not these students are athletically recruited or financially assisted." Examples of Division II colleges include Portland State University (Oregon), University of Alabama in Huntsville, and University of the District of Columbia. The NCAA manual states that a Division III school "encourages participation by maximizing the number and variety of athletic opportunities in varsity, club, and intramural sports." Examples of Division III colleges include CUNY City College (New York), Frostburg State University (Maryland), and Massachusetts Institute of Technology. Examples of non-NCAA 4-year colleges include Southwestern Oklahoma State University and Western Washington University.

Given the high level of participation in varsity level sports in high schools across the country today and the scarcity of openings on athletic teams at 4-year colleges, students with collegiate athletic aspirations need to begin planning early. First, these students must develop athletic skills that will allow them to participate on their high school teams. Second, they must begin planning early to meet the strict academic requirements specified by the NCAA for freshman eligibility if they plan to participate in intercollegiate athletics at NCAA Division I schools.[10] Both of these factors, participation in high school varsity sports[11] and academic eligibility as defined by NCAA's Propositions 48 and 16 are examined in this report. Since other factors such as gender, race/ethnicity, and family socio-economic status (SES) may also be related to final participation, these factors are also examined.

Participation by gender

Males reported participation in intercollegiate sports at higher rates than females across all 4-year colleges (6.6 vs. 3.7 percent)[12] (see table 1). This same relationship also held for reported participation at NCAA Division I colleges (2.8 vs. 1.5 percent). This second relationship was supported by data supplied by the NCAA. Using 1994 NCAA Division I data, almost two times as many males participated in intercollegiate athletics as females (84,448 vs. 42,819). It should be pointed out though that participation by females at the high school varsity level has increased by 623 percent during the past 21 years.[13]

Participation by race/ethnicity

Black and white cohort members were at least twice as likely to report participation in intercollegiate athletics at 4-year colleges as Hispanics. For blacks and whites, 4.9 percent (or 49 out of each 1,000) and 5.8 percent (or 58 out of each 1,000), respectively, reported participation in intercollegiate sports as compared to 2.2 percent (22 out of each 1,000) for Hispanics. Participation rates for blacks (4.9 percent), whites (5.8 percent), and Asians (3.9 percent) did not differ significantly. When participation rates are examined separately for Division I colleges, black reported participation rates were similar to those of whites (2.3 percent as compared to 2.5 percent).

Participation by SES

Examining college enrollment data by SES reveals that 39.7 percent of high SES 8th-graders attended NCAA Division I colleges compared to 14.7 percent for middle SES students and 5.2 percent for low SES students. Similar differences were seen by SES in reported participation in intercollegiate athletics with 1988 8th-grade students from higher SES groups more likely to report participation in intercollegiate athletics at NCAA Division I colleges than those from lower SES groups. For example, 5.0 percent of high SES cohort members reported participation as compared to 1.5 percent for middle SES and 0.5 percent for low SES 8th-grade students (see table 1). High SES students were 10 times as likely to report

participation in intercollegiate athletics as were low SES students.

Participation in high school varsity athletics

For this analysis, NELS:88 students who graduated from high school were classified into one of four groups depending on the level of participation in high school sports. These groups were:

1) Elite varsity athletes —12.1%
2) Other senior varsity athletes —22.0%
3) Sophomore varsity only or junior varsity athletes —18.6%
4) Non-varsity or non-junior varsity students —47.3%

The first group (elite varsity athletes) included individuals who reported both (1) participation in varsity level sports during their sophomore and senior years and (2) being named as captain or most valuable player in varsity sports during their senior year. The second group (other senior varsity athletes) included individuals who did not meet the criteria for group 1, but who did report participation in high school varsity athletics during their senior year. Group 3 (other athletes) included individuals who did not report participation in varsity sports as a senior, but did report participation in varsity athletics as a sophomore or in junior varsity athletics. Group 4 (non-athletes) included individuals who did not report participation in high school varsity or junior varsity athletics in either sophomore or senior years. Using this classification system, this report compares elite varsity athletes to other varsity and junior varsity athletes and non-athletes.

For those students participating at the "elite" level of varsity athletics in high school, almost 1 out of each 4 (24.5 percent) reported participation in intercollegiate athletics at 4-year colleges by 1994 (see table 2). This participation rate was greater than the rate for (1) other senior varsity athletes, (2) other athletes or (3) non-athletes (24.5 percent as compared to 10.5, 3.3, or 0.8 percent respectively). If participation is limited to NCAA Division I colleges, 1 out of each 10 "elite" varsity athletes reported participation compared to 1 in 20 for other senior varsity athletes.

Participation by high school varsity athletic participation and SES

For those 8th-grade cohort members who were classified as "elite" varsity athletes, more advantaged students (as measured by SES) were more likely than less advantaged students to report participation in intercollegiate sports at 4-year colleges (high SES = 30.4 percent; middle SES = 22.2 percent; low SES = 13.6 percent). This means that 30 out of each 100 elite varsity athletes from advantaged backgrounds (high SES) reported participation in intercollegiate athletics while about 14 out of each 100 elite low SES students reported this same outcome.

Proportion of student body at 4-year colleges who reported participation in intercollegiate sports

Overall, 14.8 percent of all NELS:88 students who were attending 4-year colleges in 1994 reported participation in intercollegiate sports (see table 3). For those attending NCAA Division I schools this participation rate was 11.5 percent as compared to 15.7 percent for NCAA Division II schools, 21.5 percent for Division III schools, and 19.4 percent for non-NCAA 4-year colleges. If the participation rate of elite varsity athletes who attended 4-year colleges is examined separately, about 40 percent (40.7 percent) reported participation in intercollegiate athletics and participation rates varied by the type college[14] attended (e.g., Division I, II, or III). For NCAA Division III schools, almost 60 percent (58.3 percent) of elite varsity athletes reported participation, while at Division I colleges, about one in three (32.5 percent) reported participation.

Who met the NCAA academic requirements as specified in Propositions 48 and 16?

In 1983, the NCAA passed Proposition 48, resulting in mandated academic eligibility requirements for entering freshman varsity athletes at Division I colleges. Proposition 48 required student athletes to have a minimum SAT score of 700 (ACT score of 17) and a minimum GPA of 2.0 in at least 11 courses in core subjects. In 1992, delegates to the 86th NCAA Annual Convention made the academic requirements for student athletes more stringent with the passage of Proposition 16. The new requirements were

implemented in two stages. In stage 1 (effective August 1, 1995), Proposition 48 core course work requirements were increased from 11 to 13 courses, with the addition of two academic electives; but the SAT/ACT and GPA requirements remained the same. In stage 2 (effective August 1, 1996), one of the academic electives was moved to English, thus the number of English courses within the 13 required core courses increased from 3 to 4 and math requirements explicitly include two years of math, where one year is algebra and one year is geometry or a higher level mathematics course for which geometry is a prerequisite. Also effective on August 1, 1996, a sliding scale combining SAT/ACT scores and GPA in at least 13 core courses was implemented. With the sliding scale, a student athlete with an SAT score of 700 (ACT of 17) must have a GPA of at least 2.5; alternatively, a student athlete with an SAT score of 900 (ACT score of 21) must have a GPA of at least 2.0. It should be pointed out that the SAT test has been recentered by the Educational Testing Service for tests taken in April 1995 and thereafter. Because of this recentering, the NCAA has approved a recentered score of 820 to be equivalent to a score of 700 on previous tests.[15] For this publication, a SAT score of 700 will be used as the cut-off because the SAT tests taken by the members of the 1988 8th-grade cohort were administered prior to 1993.

When most of the NELS:88 students graduated from high school (1992), those interested in participation in NCAA Division I athletics were required to meet the requirements specified in the NCAA's Proposition 48 in order to participate as freshmen. When these requirements were applied to NELS:88 students attending 4-year colleges, 86.1 percent of those reporting intercollegiate athletic participation met the Proposition 48 requirements, which was similar to 89.1 percent of those who did not report intercollegiate athletic participation (see table 4). For those NELS:88 students attending NCAA Division I schools, the proportions were similar (89.6 percent for athletes and 91.3 percent for non-athletes).[16]

If Proposition 16,[17] instead of Proposition 48, had been in effect for NELS:88 high school graduates, about 7 out of 10 Division I students would have met the Proposition 16 requirements—68.3 percent of students reporting intercollegiate athletic participation and 72.9 percent for non-athletes. For those reporting participation in intercollegiate athletics, this would have been a drop of 21.3 percentage points.

Conclusions

For a typical 8th-grade male student, the probability that he may eventually participate in intercollegiate athletics at an NCAA Division I college two years after scheduled high school graduation is small and even smaller for females. About 22 out of each 1,000 students from the 8th-grade class of 1988 reported participation in intercollegiate athletics at Division I schools. Even for the elite high school varsity athlete, the participation rate is modest. About 100 out of each 1,000 "elite" high school varsity athletes reported participation in intercollegiate athletics at Division I schools. While an athlete who demonstrates that he/she can play at the high school level has an advantage over other high school students, being an outstanding high school athlete does not guarantee admission at a Division I school. For those "elite" high school varsity athletes that do enroll in NCAA Division I colleges, the participation rate increases to 32.5 percent (325 out of each 1,000). Both athletic and academic credentials are necessary to participate in intercollegiate athletics at the Division I level. The prospective college athlete must meet specific academic criteria (minimum GPA and SAT/ACT scores) that have been established by the NCAA as specified in Proposition 48 (replaced by the more restrictive Proposition 16 as of August 1996) to be able to participate as a freshman in intercollegiate athletics at a Division I college. It is important that high school athletes, guidance counselors, and parents understand the roles that GPA and scores on college admission tests play in college admission and athletic eligibility.[18]

References

1993 NCAA Division I Graduation-Rates Summary, Edited by Martin T. Benson, Publications Editor, June 1993.

National Collegiate Athletic Association, *Participation Statistics Report,* NCAA 10416-5/95.

National Collegiate Athletic Association, *1995–96 NCAA Manual* (Section 14.02.9).

National Collegiate Athletic Association, *1994–95 NCAA Manual.*

National Collegiate Athletic Association, *1996–97 NCAA Manual.*

Endnotes

1. In this report, the phrase "4-year colleges" also includes 4-year universities.

2. For purposes of this analysis, to be considered as having participated in intercollegiate athletics, a NELS:88 student had to self-report participation in intercollegiate athletics at a 4-year college. The NELS:88 respondent was read the following text :

"The next set of questions are about various extracurricular activities at NAME OF INSTITUTION ATTENDED LONGEST*. Please tell me if you have ever participated in any of these activities while attending NAME OF INSTITUTION ATTENDED LONGEST."

- Varsity intercollegiate athletics? Yes No
- Other intercollegiate athletics? Yes No
- Intramural athletics? Yes No

* See technical appendix for more detailed information on institution "attended longest" as compared to "first" or "last' institution attended.

In creating this variable (participation in intercollegiate athletics at 4-year colleges), the NAME OF INSTITUTION ATTENDED LONGEST was checked to determine if it was a 4-year institution. If it was a 4-year institution, then student responses to "VARATH" were checked to determine participation in intercollegiate athletics. The reader should also realize that not all intercollegiate athletic activities are sanctioned by the NCAA. Thus, it is very likely that a "yes" to the "intercollegiate athletics" question may refer to participation in activities such as table tennis, archery, bowling, or rugby which are not administered by the NCAA at the Division I level (79 championships in 21 sports for its member institutions). This means that the numbers presented in this report may be biased upward for participation in NCAA schools that only sanction selected sports. It should also be pointed out that NELS:88 respondents who participated in intercollegiate athletics at 2-year colleges or those who participated at 4-year institutions other than the institution attended longest were not used in this analysis. It is possible that a NELS:88 student participating in athletics at a 2-year college may transfer to a 4-year college to complete athletic eligibility.

3. According to a listing of NCAA colleges obtained from the NCAA, there are 955 colleges that make up the NCAA Division I, Division II, and Division III colleges; 305 are classified as Division I, 260 are classified as Division II, and 390 are classified as Division III.

4. For the year 1992–93, 121,248 student-athletes participated in NCAA sanctioned sports at NCAA Division I colleges (from NCAA "Participation Statistics Report," 10416-5/95—pages 112-113). A total of 58,398 of these athletes at Division I colleges received athletic scholarships (from the NCAA Division I Graduation-Rates Summary—page 7). This means that approximately 48 percent of Division I athletes may have been on athletic scholarship.

5. For purposes of this analysis, NELS:88 high school students were classified into one of four groups depending on the level of participation in high school sports. The first group (elite varsity athletes) included individuals who reported participation in varsity level sports in 1990 and 1992, and being named captain or most valuable player during 1992. The second group (other senior varsity athletes) included individuals who did not meet the criteria for group 1, but who did report participation in high school varsity athletics in 1992. The third group (other varsity or junior varsity athletes) included individuals who did not meet the criteria for group 1 or group 2, but who did report participation in varsity or junior varsity athletics. Group 4 (non-varsity or non-junior varsity athletic respondents) included individuals

who did not report participation in high school athletics at the varsity or junior varsity levels in either 1990 or 1992.

6. In a 1995 report "Participation Statistics Report," the NCAA reported that there were 2,735,784 full-time students in NCAA Division I schools. The report further reported that 123,751 (4.5 percent) of these students participated in intercollegiate athletics. Before this number can be compared to the NELS:88 data (11.5 percent overall participation rate) though, it is important to point out that not all college-level varsity sports participation reported by NELS:88 are among the 21 administered NCAA championship sports (e.g., table tennis, rugby, bowling). The NELS:88 questionnaire item for varsity sports participation did not specify that the sports had to be NCAA sanctioned. Thus, it is reasonable to assume that some students responding "yes" to participation in intercollegiate sports did not actually participate in NCAA sanctioned sports. It may also be possible that a student participated his/her first year (or semester) in college, but not the current year (or semester).

Intercollegiate sports supported by the NCAA—As reported on page 114 of the NCAA report "Participation Statistics Report," men participated in 19 major sports including baseball, basketball, cross country, fencing, football, golf, gymnastics, ice hockey , lacrosse, rifle, skiing, soccer, swimming, tennis, indoor track, outdoor track, volleyball, water polo, and wrestling in Division I sports. The seven most popular sports were football, baseball, outdoor track, indoor track, soccer, basketball, and cross country. It should be noted that not all sports are supported by each of the 305 NCAA Division I colleges. For example, only 10 colleges support men's skiing. As reported on page 115, women participated in 15 sports including basketball, cross country, fencing, field hockey, golf, gymnastics, lacrosse, skiing, soccer, softball, swimming, tennis, indoor track, outdoor track, and volleyball. The seven most popular sports were outdoor track, indoor track, basketball, cross country, swimming, volleyball, and softball.

7. Non-NCAA—College is not a member of NCAA Divisions I, II, or III.

8. Under NCAA's Proposition 48—freshman eligibility for Division I sports—a potential college athlete must have a high school GPA (Grade Point Average) of 2.0 in eleven core subjects and a minimum SAT score of 700 (ACT score of 17). Under Proposition 16 (implemented August, 1996), the number of core courses increase to 13 and a sliding scale is used to determine eligibility. For example, while a student with a 2.0 GPA must have a SAT score of 900 (ACT score of 21), a student with a GPA of 2.5 only needs to have a SAT score of 700 (ACT score of 17). In the following section, specific requirements of the non-centered version of Proposition 16 are presented.

NCAA Proposition 16 Requirements—Using the following eligibility index (as defined by Sections 14.3.1.1 and 14.3.1.1.1 of the 1995/96 NCAA Manual), freshmen may establish eligibility for participation in Division I collegiate athletics by meeting or exceeding one of the combinations of GPA and entrance exam scores specified below.

Core GPA *	SAT	or ACT**
2.500 or above	700	17
2.475	710	18
2.450	720	18
2.425	730	18
2.400	740	18
2.375	750	18
2.350	760	19
2.325	770	19
2.300	780	19
2.275	790	19
2.250	800	19
2.225	810	20
2.200	820	20
2.175	830	20
2.150	840	20
2.125	850	20
2.100	860	21
2.075	870	21
2.050	880	21
2.025	890	21
2.000	900	21

* GPA is based on a minimum grade–point average in a successfully completed core curriculum that includes at least 13 academic courses in the following areas:

English	4 years

Mathematics [one year of algebra and one year of geometry (or one year of a higher-level mathematics course for which geometry is a prerequisite)]	2 years
Natural or physical science (including at least one laboratory course, if offered by school)	2 years
Additional courses in English, mathematics, natural or physical science	2 years
Social science	2 years
Additional academic courses [in any of the above areas or foreign language, computer science, philosophy or nondoctrinal religion (e.g., comparative religion) courses]	1 year

** SAT—Scholastic Achievement Test; ACT—American College Testing Program

NOTE: The SAT test has been recentered by the Educational Testing Service for tests taken in April 1995 and thereafter. Because of this recentering, the NCAA has approved a recentered score of 820 to be equivalent to a score of 700 on previous tests. For this publication, a SAT score of 700 will be used as the cut-off because the SAT tests taken by the members of the 1988 8th-grade cohort were administered prior to 1993.

9. The listing supplied by the NCAA included mailing labels for Division I, II, and III member colleges. It should be pointed out that it is possible for a member college to be on the Division I mailing list, but not be at the Division I level in all sports.

10. The actual NCAA application process for Division I schools involves (1) the high school attended by the high school student athlete, (2) the student athlete, and (3) the NCAA Clearinghouse. The Clearinghouse serves as the gate keeper in the process by evaluating information provided by the high school and the student athlete applicant. This group determines who is a qualifier, partial qualifier, or nonqualifier (see 1995–96 NCAA Manual, Section 14.02.9). Information provided by the applicant's high school includes descriptions of the courses offered by the school. The NCAA Clearinghouse evaluates these course listings and makes a determination as to which can be used to satisfy the 13 core courses required by Proposition 16. **The NCAA HOTLINE number is 1-800-638-3731.**

The student athlete applicant must also fill out an application that states the applicant's intention to participate in varsity sports at the collegiate level. The NCAA Clearinghouse keeps applicants advised as to their status on meeting the freshman eligibility requirements. In addition, applicants can use the NCAA automated phone number by entering their personal ID number to receive a message as to their status. For those students who do not meet the core course or GPA requirements at the end of eight semesters in high school, the student athlete loses one year of eligibility at Division I schools. Student athletes are allowed to take summer courses during their freshman, sophomore, and junior years and still be in the eight semester limit. They are also allowed to take the SAT or ACT tests more than once with the highest scores on the separate tests being used to determine athletic eligibility.

11. Information on participation in high school varsity sports was collected in 1990 and 1992 when most of the NELS:88 students were sophomores and seniors respectively.

12. Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in Federally funded education programs and activities, including athletics. Although participation rates for females are less than the participation rates for males, the rates for females have increased greatly since the enactment of Title IX.

13. For the typical college athlete, participation in sports began in elementary school. The better athletes from elementary schools continued to participate in varsity athletics at the high school level. As reported by the National Federation of State High School Association in the report "Participation Statistics Report"—page 122, participation in high school athletics has increased during the past 21 years from 3,960,932 in 1971 to 5,603,285 in 1993–94. This 41 percent increase can be explained entirely by increased participation by girls whose participation increased by 623 percent from 294,015 in 1971 to 2,124,755 in 1993–94. If a

specific sport such as basketball is examined separately, girls' participation in this sport has increased from 132,299 in 1972 to 412,576 in 1994–95. This is a 312 percent increase. It should be pointed out that this increase in female participation levels coincides with the passage of Title IX of the education amendments of 1972.

14. Each of the three NCAA divisions has its own philosophy regarding athletic participation and emphasis on sports. As reported in the 1994–95 NCAA manual, a Division I college "strives in its athletics program for regional and national excellence and prominence." Colleges in this division also emphasize "spectator-oriented sports, as a reflection of its goal of maintaining an appropriate competitive level in its sports program." Division II colleges believe "in offering a maximum amount of intercollegiate athletics participation to as many of its students as possible...." Athletically related financial aid is at a more modest level than Division I colleges. At the other extreme, a Division III college "encourages participation by maximizing the number and variety of athletic opportunities in varsity, club and intramural sports." Athletes do not receive more favorable treatment for financial aid than do other students.

15. Crosswalk for recentered SAT scores

Section 14.3.1.1.1 (Initial Eligibility Index) – from 1996/97 NCES Manual

Core GPA	SAT[1]	SAT recentered[2]	Combined ACT scores
2.500 & above	700	820	68
2.475	710	830	69
2.450	720	840-850	70
2.425	730	860	70
2.400	740	860	71
2.375	750	870	72
2.350	760	880	73
2.325	770	890	74
2.300	780	900	75
2.275	790	910	76
2.250	800	920	77
2.225	810	930	78
2.200	820	940	79
2.175	830	950	80
2.150	840	960	80
2.125	850	960	81
2.100	860	970	82
2.075	870	980	83
2.050	880	990	84
2.025	890	1000	85
2.000	900	1010	86

[1] If taken prior to April 1, 1995
[2] If taken on or subsequent to April 1, 1995

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16. The question may be raised as to why 11.4 percent of all Division I college athletes do not meet the NCAA Proposition 48 requirements for athletic eligibility. It is possible that the NCAA Clearinghouse process and the NELS:88 researchers could reach different conclusions for a given NELS:88 student as to athletic eligibility for a NCAA Division I school for several reasons: For example, because students are allowed to take the SAT/ACT tests multiple times, it is possible (but not likely) that the NELS:88 transcript may not have the most up-to-date scores. It is also possible that NELS:88 researchers may have included or excluded courses that the NCAA Clearinghouse accepted. Other possibilities include: the respondent may have incorrectly responded "yes" to "participation in intercollegiate athletics" or the respondent is participating in a sport that is not administered by the NCAA at the Division I level. It is also possible that the participant did not initially meet the NCAA requirements (non or partial qualifier) and did not play in the freshman year, but participated in intercollegiate athletics in the following year.

17. It should be pointed out the NELS:88 students who reported participation in intercollegiate athletics at Division I colleges did not have to meet the requirements of Proposition 16. They graduated under the less stringent requirements of Proposition 48. Thus, we do not know how the NELS:88 high school graduates would have performed on the stricter requirements if they would have known about them. We can assume though that some would have stepped up their academic activity so as to meet the more stringent requirements.

18. For more information (details/explanations) related to NCAA initial-eligibility Clearinghouse issues, the **NCAA HOTLINE** number is **1-800-683-3731**.

Appendix: Technical notes for NELS:88

The NELS:88 Baseline comprised a national probability sample of all regular public and private 8th grade schools in the 50 states and the District of Columbia in the 1987–88 school year. During the base year data collection, students, parents, teachers, and school administrators were selected to participate in the survey. A total of 24,599 8th-grade students participated in the base-year survey (93 percent response rate).

The NELS:88 first follow-up survey was conducted during the spring of 1990. Students, dropouts, teachers, and school administrators participated in the follow-up, with a successful data collection effort for 17,424 individuals in the student survey (approximately 93 percent response rate). Prior to data collection, the sample was freshened with tenth-grade students who did not have the opportunity to be in the 8th-grade sample during the base-year (e.g., out of country).

During second follow-up data collection activities (1992), data were collected from students, dropouts, parents, teachers, school administrators, and extant high school transcripts. Again, as was done in the first follow-up, the sample was freshened. In addition, high school transcripts were collected.

During third follow-up data collection activities (1994), data were collected from 14,915 respondents (94 percent response rate). As of 1994, these respondents had taken many different paths that included (1) dropping out of high school, (2) high school graduation, (3) entry into the world of work, (4) entry into postsecondary education, and (5) family formation. For those going on to postsecondary education, information was collected on type of college attended and activities experienced while in college. One of these activities was participation in intercollegiate sports. For those NELS:88 students attending 4-year colleges, information provided by the NCAA (i.e., type of NCAA college—Division I, II, or III) was merged onto respondent records.

Characteristics of the sample used for this report

The student sample used for this study included all NELS:88 8th-grade students who remained in the study through third follow-up. Excluded students included base year ineligible and freshened (first and second follow-up) respondents. For purposes of this analysis, the third follow-up panel weight was used.

Characteristics of retained students and students with incomplete data

For this analysis, the distribution of 1988 8th-grade students who were (1) retained for this analysis ("complete cases"), and (2) excluded because of incomplete data (e.g., status could not be determined or imputed "incomplete cases") were compared. The major point to be made in examining this data is that there are very few incomplete cases.

Sampling errors

The data were weighted using the third follow-up panel weight (F3PNLWT) to reflect the sampling rates (probability of selection) and adjustments for unit nonresponse. The complex sample design was taken into account when a Taylor series approximation procedure was used to compute the standard errors in this report. The standard error is a measure of the variability of a sample estimate due to sampling. It indicates, for a given sample size, how much variance there is in the population of possible estimates of a parameter. If all possible samples were selected under similar conditions, intervals of 1.96 standard errors below to 1.96 standard errors above a particular statistic would include the true population parameter being estimated for about 95 percent of these samples (i.e., 95 percent confidence interval). Comparisons noted in this report are significant at the 0.05 level, using Bonferroni adjusted t-tests where appropriate.

Standard errors for all of the estimates are presented in Tables 1, 2, and 3. These standard errors can be used to produce confidence intervals. For example, an estimated 5.2 percent of 1988 8th-graders went on to participate in intercollegiate sports. This figure has an estimated standard error of 0.32 percent. Therefore, the estimated 95 percent confidence interval for this statistic is approximately 4.6 percent to 5.8 percent.

Definitions of criteria used

Participation in intercollegiate athletics—The respondent reported "yes" to the question, "Did you ever participate in varsity intercollegiate athletics?"

Participation in high school athletics—For purposes of this analysis, NELS:88 high school students were classified into one of four groups depending on the level of participation in high school sports. The first group (elite athletes) included individuals who reported participation in varsity level sports in 1990 and 1992, and being named captain or most valuable player during 1992. The second group (other senior varsity athletes) included individuals who did not meet the criteria for group 1, but who did report participation in high school varsity athletics in 1992. The third group (other varsity or junior varsity) included individuals who did not meet the criteria for group 1 or group 2, but who did report participation in varsity or junior varsity athletics. Group 4 (non-varsity or non-junior varsity athletic respondents) included individuals who did not report participation in high school athletics at the varsity or junior varsity levels in either 1990 or 1992.

The following variables were used to create the athletic participation variable.

FIRST FOLLOW-UP VARIABLES

F1S41AA='PLAYED BASEBALL/SOFTBALL AT SCHOOL'
F1S41AB='PLAYED BASKETBALL AT SCHOOL'
F1S41AC='PLAYED FOOTBALL AT SCHOOL'
F1S41AD='PLAYED SOCCER AT SCHOOL'
F1S41AE='PARTICIPATED ON SWIM TEAM AT SCHOOL'
F1S41AF='PLAYED OTHER TEAM SPORT AT SCHOOL'
F1S41AG='PLAYED AN INDIVIDUAL SPORT AT SCHOOL'

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SECOND FOLLOW-UP VARIABLES

F2S29G='NAMED MOST VALUABLE PLAYER ON SPORT TEAM'
F2S30AA='PARTICIPATED ON A TEAM SPORT AT SCHOOL'
F2S30AB='PARTICIPATED IN INDIVIDUAL SPORT AT SCHOOL'

Other variables used in analysis

Attendance at 4-year college—For this analysis, a student was considered to be attending a 4-year college if "institution attended the longest" was a 4-year college. In 90 percent of the cases where "institution attended the longest" was a 4-year college," the "first institution" attended was also the longest. In 89 percent of the cases, the "last institution" attended was also the longest. For the 11 percent of the cases where the ID of the "last institution" attended did not match the ID of the "longest college" attended, 97 percent of the time both institutions were 4-year colleges.

Gender of student (F3SEX)—F3SEX is based on the first follow-up (F1SEX) composite and is augmented by second follow-up new student supplement information (in F2N2) if appropriate or, if still missing, by imputation from student first names.

Student's race/ethnicity (F3RACE1)—F3RACE is based on F1RACE (first follow-up race/ethnicity variable) and is supplemented when appropriate with second follow-up new student supplement data (in F2N17). If F2RACE1 was still missing, available information from the contractor's Survey Management System was used to fill in missing values.

Socio-Economic Status of student's family (F2SES1Q)—Indicates the quartile into which F2SES1 falls (level 1 = bottom 25%; level 2 = middle two quartiles; and level 3 = high 25%). F2SES1 was constructed using base year parent questionnaire data, when available. The following parent data were used: Father's education level, mother's education level, father's occupation, mother's occupation, and family income (data coming from BYP30, BYP31, BYP34B, BYP37B, and BYP80). See page H-12 in NELS:88 Second Follow-up User's Manual for a detailed description of procedures used to create the SES variable.

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Table 1.—Percentage of 1988 8th-graders who participated in intercollegiate sports, by gender, race/ethnicity, socio-economic status, level of high school athletic participation, and type of college attended longest by 1994

Student characteristics	Any 4-year college	Any NCAA college	NCAA Division I college	NCAA Division II college	NCAA Division III college	Non-NCAA 4-year college
Total	5.2 (0.32)[1]	4..3 (0.30)	2.2 (0.24)	0.9 (0.11)	1.3 (0.12)	0.8 (0.12)
Gender						
Males	6.6 (0.52)	5.6 (0.50)	2.8 (0.42)	1.3 (0.19)	1.5 (0.17)	1.1 (0.19)
Females	3.7 (0.33)	3.1 (0.31)	1.5 (0.25)	0.6 (0.11)	1.0 (0.14)	0.6 (0.13)
Race/ethnicity						
Asian	3.9 (1.11)	3.4 (1.07)	1.5 (0.44)	0.9 (0.82)	1.0 (0.49)	0.5 (0.26)
Hispanic	2.2 (0.40)	1.9 (0.36)	1.1 (0.25)	0.4 (0.19)	0.3 (0.19)	0.3 (0.18)
Black	4.9 (0.98)	4.3 (0.88)	2.5 (0.74)	1.4 (0.51)	0.4 (0.13)	0.6 (0.27)
White	5.8 (0.40)	4.8 (0.37)	2.3 (0.30)	0.9 (0.11)	1.6 (0.16)	1.0 (0.15)
Socio-economic status (SES)[2]						
Low	1.5 (0.22)	1.1 (0.19)	0.5 (0.14)	0.3 (0.11)	0.2 (0.07)	0.4 (0.12)
Medium	4.3 (0.36)	3.5 (0.33)	1.5 (0.24)	1.0 (0.17)	1.1 (0.14)	0.8 (0.17)
High	10.2 (0.84)	8.9 (0.81)	5.0 (0.75)	1.3 (0.22)	2.6 (0.33)	1.3 (0.29)

[1]Numbers in parenthesis ( ) represent standard errors.

[2]Socio-economic status (SES)—Low SES represents students who are classified in bottom 25 percent on a measure of socio-economic status that uses father's and mother's occupation and education and family income; middle SES represents students classified in middle two quartiles; high SES represents students classified in top 25 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988/94: Base year through third follow-up.

Table 2.—Percentage of 1988 8th-graders graduating from high school who participated in intercollegiate sports, by level of high school athletic participation and socio-economic status, and type of college attended longest for the two year period 1992–94

Selected characteristics of students	Any 4-year college	Any NCAA college	NCAA Division I college	NCAA Division II college	NCAA Division III college	Non-NCAA 4-year college
Total	6.3 (0.38)[1]	5.3 (0.35)	2.7 (0.29)	1.1 (0.13)	1.5(0.14)	1.0 (0.14)
Level of high school varsity athletic participation						
Elite varsity	24.5 (1.64)	21.1 (1.49)	10.5 (1.19)	4.3 (0.63)	6.3 (0.81)	3.4 (0.65)
Senior varsity	10.5 (1.05)	8.7 (0.98)	4.5 (0.89)	2.0 (0.43)	2.1 (0.32)	1.8 (0.45)
Other sophomore varsity or junior varsity	3.3 (0.42)	2.8 (0.40)	1.2 (0.26)	0.6 (0.19)	1.0 (0.25)	0.4 (0.14)
Not varsity or junior varsity	0.8 (0.18)	0.6 (0.13)	0.3 (0.11)	0.1 (0.03)	0.2 (0.07)	0.3 (0.12)
Level of high school athletic participation by SES[2]						
Elite varsity athletes						
Low SES	13.6 (2.74)	10.1 (2.44)	4.1 (1.61)	4.2 (1.80)	1.8 (0.88)	3.5 (1.57)
Middle SES	22.2 (2.44)	19.3 (2.38)	8.4 (2.05)	4.7 (0.93)	6.2 (1.14)	2.9 (0.83)
High SES	30.4 (2.71)	26.4 (2.60)	4.7 (1.95)	3.9 (0.92)	7.7 (1.39)	4.0 (1.21)
Other senior varsity athletes						
Low SES	4.6 (1.19)	3.2 (1.06)	2.4 (0.96)	0.4 (0.30)	0.5 (0.35)	1.3 (0.53)
Middle SES	8.0 (1.11)	6.1 (0.90)	2.3 (0.51)	2.2 (0.70)	1.6 (0.36)	1.9 (0.66)
High SES	16.8 (2.26)	14.9 (2.23)	8.8 (2.26)	2.5 (0.70)	3.6 (0.73)	1.9 (0.80)
Sophomore varsity only or junior varsity athletes						
Low SES	2.0 (0.82)	1.4 (0.74)	0.7 (0.44)	0.7 (0.60)	0.0 (0.00)	0.6(0.35)
Middle SES	2.0 (0.45)	1.7 (0.42)	0.5 (0.20)	0.5 (0.26)	0.7 (0.27)	0.3 (0.17)
High SES	5.9 (1.00)	5.4 (0.97)	2.7 (0.68)	0.7 (0.33)	2.1 (0.62)	0.5 (0.29)
Not varsity or junior varsity						
Low SES	0.4 (0.19)	0.2 (0.13)	0.0 (0.00)	0.04 (0.04)	0.2 (0.12)	0.2 (0.14)
Middle SES	0.9 (0.29)	0.7 (0.22)	0.4 (0.19)	0.1 (0.05)	0.2 (0.09)	0.2 (0.19)
High SES	1.2 (0.35)	0.7 (0.26)	0.4 (0.19)	0.0 (0.00)	0.3 (0.18)	0.5 (0.24)

[1]Numbers in parenthesis ( ) represent standard errors.

[2]Socio-economic status (SES)—Low SES represents students who are classified in bottom 25 percent on a measure of socio-economic status that uses father's and mother's occupation and education and family income; middle SES represents students classified in middle two quartiles; high SES represents students classified in top 25 percent.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988/94: Base year through third follow-up.

Table 3.—Percentage of 1992 NELS:88 high school graduates attending 4-year colleges who participated in intercollegiate sports, by type of college attended longest for the period 1992–94

Classification of college	Total	Participation in high school varsity athletics			
		Elite varsity	Senior varsity	Other varsity or junior varsity	Non-varsity and non-junior varsity
Total	14.8 (0.80)*	40.7 (2.34)	20.4 (1.78)	8.1 (0.99)	2.4 (0.50)
NCAA college	14.2 (0.83)	39.8 (2.36)	19.3 (1.86)	8.0 (1.06)	1.9 (0.44)
Division I college	11.5 (1.13)	32.5 (3.11)	16.0 (2.68)	5.3 (1.10)	1.7 (0.59)
Division II college	15.7 (1.68)	43.5 (4.85)	22.4 (3.88)	11.2 (3.36)	0.9 (0.45)
Division III college	21.5 (1.70)	58.3 (4.25)	28.0 (3.44)	14.2 (3.14)	3.5 (1.19)
Non-NCAA college	19.4 (2.32)	46.9 (6.77)	28.2 (5.37)	9.0 (2.91)	6.1 (2.60)

*Numbers in parenthesis ( ) represent standard errors.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988/94: Base year through third follow-up.

Table 4.—Percentage of 1988 8th-graders attending 4-year colleges who met the requirements of NCAA's Propositions 48 and 16, by type of college attended longest for the period 1992–94 and participation in intercollegiate athletics

Type of 4-year college attended for longest period of time	Proposition 48 Intercollegiate athlete		Proposition 16 Intercollegiate athlete	
	Yes	No	Yes	No
Total	86.1 (1.91)*	89.1 (0.74)	64.0 (3.09)	70.3 (1.29)
NCAA college	86.3 (2.09)	89.8 (0.77)	64.7 (3.32)	70.8 (1.37)
Division I	89.6 (2.74)	91.3 (0.82)	68.3 (4.86)	72.9 (1.55)
Division II	79.7 (4.81)	81.5 (2.31)	57.4 (6.05)	61.8 (2.96)
Division III	85.3 (3.16)	93.1 (1.41)	63.7 (4.14)	72.8 (2.67)
Non-NCAA college	84.3 (4.72)	83.6 (2.20)	59.5 (7.52)	66.1 (2.84)

*Numbers in parenthesis ( ) represent standard errors.

SOURCE: U.S. Department of Education, National Center for Education Statistics, National Education Longitudinal Study of 1988/94: Base year through third follow-up.

*U.S. Government Printing Office: 1996 — 421-751/60426